

FUSARIUM HEAD BLIGHT COMMON FIND IN WHEAT FIELDS THIS YEAR

KDA performs an annual survey on wheat disease in conjunction with the Kansas State University plant pathology department to assess the diseases present on wheat each year and to estimate yield losses due to disease. This year, surveyors found Fusarium head blight (FHB), also known as head scab, in low levels across much of the state. Of the 114 fields visited in 2021 by KDA staff, 34 fields were found to have FHB present, or about 30%. This is an above-average presence of this disease compared to a typical year. The overall abnormally cool growing season and the above average rains made for good conditions for this disease to thrive.

FHB is caused by the fungal pathogen *Fusarium graminearum*. This fungus also affects corn, causing Gibberella ear rot. In both cases it produces a toxin known as vomitoxin or deoxynivalenol, which can make animals ill if consumed. Presence of this toxin in harvested grain may lead to dockage at the elevator. Symptoms include premature browning of kernels, poor grain fill, and usually orange fungal growth on the exterior of the head, at the base of the kernels. Anywhere from a few scattered kernels to an entire head may be affected. The pathogen survives from year to year in plant stubble, so planting wheat and corn in the same field in back to back years may increase the risk of this disease. Tillage may be recommended to control it.



Figure 1: Fusarium head blight, also known as wheat head scab, causes premature browning of kernels and poor grain fill. There is also frequently orange fungal growth on the exterior of the kernels.

DRYLAND FOOT ROT FOUND IN WESTERN KANSAS WHEAT FIELDS

During the same annual wheat surveys, while some surveyors were finding Fusarium head blight, others were finding another *Fusarium spp.*-caused disease, dryland foot rot. Dryland foot rot is a crown and root rot that affects wheat as well as other cereal grains such as oats and barley. It may cause damping-off in early infections. It causes the roots and crown to become brown and rotted, and may also lead to decreased number of tillers, and reduction in head size and grain weight due to early ripening. Plants may also die prematurely as a result of this disease.

Drought stress makes the plants susceptible to this disease. It is associated with high fall soil temperatures, low fall soil moisture, and moisture stress after anthesis. It is not a very common disease in Kansas, only appearing in small quantities and primarily in the western part of the state, which is where it was detected by KDA this year. The fungi that cause this disease survive from one year to the next in infected stubble. Tilling the field and rotating crops may decrease the chance of this disease occurring.



Fig. 2: Dryland foot rot causes the roots and crown to turn brown. It is frequently accompanied by incomplete grain fill or entire plant death. Photo: Ernesto Moya, Bugwood.org

Plant Protection and Weed Control staff work to ensure the health of the state's native and cultivated plants by excluding or controlling destructive pests, diseases, and weeds. Staff examine and analyze pest conditions in crop fields, rangelands, greenhouses, and nurseries. Action taken to control potential infestations of new pests, whether they are insects, plant diseases, or weeds, is beneficial to the economy and the environment.

Our mission is to:

- Exclude or control harmful insects, plant diseases, and weeds;
- Ensure Kansas plants and plant products entering commerce are free from quarantined pests;
- Provide customers with inspection and certification services.

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